

Laser therapies for nail scratch wounds

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Background and objectives: Scars that arise from nail scratches are extremely common but their therapeutic options are rarely discussed in the literature. This may reflect the fact that most of these scars develop from shallow injuries that do not penetrate the full thickness of the dermis and therefore rarely undergo hyperkeratosis and keloid formation. We asked whether various laser therapies can improve the appearance of nail scratch scars.

Materials and methods: A retrospective case report review was conducted to identify all cases of nail scratch scars in children that (i) were not self-inflicted, (ii) presented with a depressed texture, erythema, and hyper- or hypo-pigmentation, (iii) were referred to our outpatient department in June 2014–April 2021, and (iv) underwent laser therapy. The scars were photographed by a 3D skin analyzer prior to and 6 months after therapy.

Results: Six cases were identified. The patients were 3–6 years old and the scars were 4 months to 3 years old. Depending on the scar characteristics, the scars were treated with pulsed dye laser, Q switched Ruby laser, or fractional radiofrequency. These therapies significantly improved the appearance of the scars in all six cases without complications, although persistent erythema was observed after Q switched ruby laser treatment.

Conclusion: Laser therapy can improve nail scratch wounds. However, the efficacy and complications of this treatment should be examined with a prospective study. The present study also suggests that 3D camera imaging can be useful for assessing scarring. In particular, it may help identify the individual characteristics of nail scratch scars, which should be considered when selecting the laser therapy.